Brain training and whether or not it works has been the recent focus of many controversial discussions. There are numerous commercial products claiming to improve general mental ability; however, the scientific evidence for such claims is sparse. In order for brain training to be effective, we want trainees to not just get better at the training task, but we also want them to be able to “transfer” their skills to other tasks or domains. For the past decade, I and my collaborators have been using brain training as a tool to investigate brain plasticity, and we have been developing interventions targeting children as young as 5 years old to older adults in their eighties. Our work suggests that cognitive training can indeed lead to generalizing effects in various relevant domains, such as problem solving, math and reading skills. Nonetheless, our data also reveal important individual differences that constrain training efficacy, some of which are related to pre-existing abilities or motivation. I will conclude by emphasizing that the focus on individual differences can provide important insights to inform the development of more effective interventions to promote transfer, and I will outline some of the current outstanding questions, such as the longevity of training effects and its real-life consequences.

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